**Amendments to the Specification:**

Please amend the paragraph on page 3, line 29 through line 34 as follows:

Figure 2 is a block diagram of an optical communication system according to an embodiment of the invention. Transmitter 200 communicates with receiver ~~222~~ 223 over channel 213. In Figure 2 the data to be encoded is coupled into a trellis encoder 201. The trellis encoder 201 includes convolutional coder 206 and subset mapper 203. The trellis encoder 201 may be a single trellis encoder or it may be a series of trellis encoders in parallel.

Please amend the paragraphs beginning at page 12, line 18 and ending on page 13, line 27 as follows:

Figure 7 is a graphical illustration of the impulse response of an exemplary fiber channel. In Figure 7, point 719 represents a decision point where the value of the waveform 729 is sampled. Since the input waveform is an impulse, by definition only one value (represented by point 719) is provided to the channel. Therefore any subsequent response such as values 721, 723, 725 or 727 do not represent valid values which have been provided to the channel. Values 721, 723, 725 and 727 instead represent intersymbol interference caused by the impulse function. Samples 721, 723, 725 and 727 may be caused by the dispersion of the impulse waveform within a multimode fiber and are an undesirable feature of the fiber channel. They are generally caused by the differing propagation times of the impulse through different modes of the fiber. An equalizer, such as the illustrated DFE 625 may compensate for the distortion introduced by samples such as 721, 723, 725 and 727. The decision feedback equalizer uses an adaptive transversal filter ~~711~~ 623 to generate a waveform equivalent to the trailing edge 731 of the impulse response. The trailing edge, represented by 731, is the portion of the waveform immediately after the sampled point 719 which includes spurious response points 721, 723, 725 and 727. The portion 731 of the waveform ~~719~~ represents the spurious response of the channel. The adaptive transversal filter 623 makes a copy of the spurious response and subtracts it from the overall channel response in summation unit 619. The adaptive transversal filter is termed adaptive because it must adapt itself to the characteristics of the channel.

In other words, the adaptive transversal filter must be trained using the channel characteristics in order to derive the proper response that will be provided to the summation unit 619. Once the slicer 621 detects which symbol is present, the adaptive transversal filter can then provide the response necessary to cancel the intersymbol interference present that would accompany the transmitted point.

The received waveform at a point prior to the summation unit 619 is shown on oscilloscope 615 as display 615A. Display 615A is a scatter type waveform that does not exhibit distinct levels. The waveform ~~631~~ 731 may be generated by the adaptive transversal filter ~~611~~ 623, in order to cancel the intersymbol interference (ISI) within the channel.

Once the intersymbol interference is subtracted from the incoming signal in summation unit 619, the output of the summation unit appears as shown on oscilloscope 617, in display 617A. Display 617A represents an eye diagram having five discrete levels. Once the levels have been well defined, as seen on display 617A, the slicer 621 is able to distinguish relatively easily between the symbols. The adaptive transversal filter ~~623~~ 621 will respond to whatever symbol is found by the slicer 623 and provide the necessary waveform to cancel the intersymbol interference caused by the found symbol's transmission. The transversal filter ~~generating~~ generates an intersymbol interference replica, which must be subtracted from the incoming signal. The intersymbol interference waveform changes, depending on which symbol has been found by the slicer. The output of the decision feedback equalizer depends on the previously decoded symbols. The PAM-5 symbols found are then decoded by the Physical Coding Sublayer (PCS) ~~521~~ 627 and then provided to an interface such as a XGMII interface (not shown).